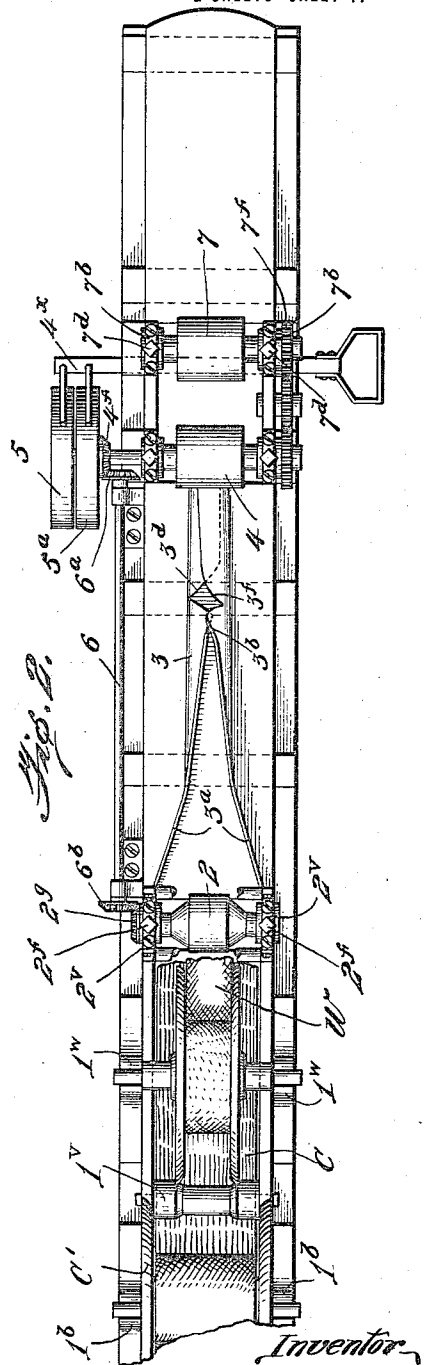
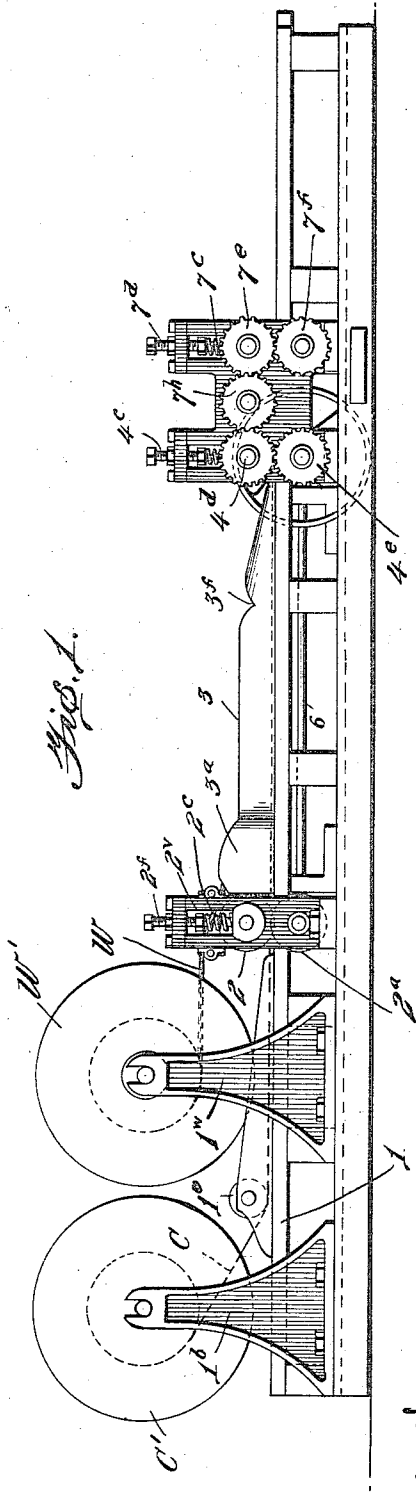


G. W. UTSMAN.
MACHINE FOR MAKING CIGARETTE PAPER BOOKS.
APPLICATION FILED FEB. 16, 1918.

1,265,835.

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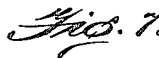
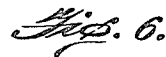
2 SHEETS—SHEET 1.



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1,265,835.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING CIGARETTE-PAPER BOOKS.

1,265,835.

Specification of Letters Patent.

Patented May 14, 1918.

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To all whom it may concern:

Be it known that I, GEORGE W. UTSMAN, a citizen of the United States, residing at West Durham, in the county of Durham and State of North Carolina, have invented certain new and useful Improvements in Machines for Making Cigarette-Paper Books; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to machines for making cigarette wrapper books, of the kind that are now attached to bags or packages of cigarette tobacco, and which are usually made by hand. The object of the present invention is to enable such books to be made automatically by machinery, the tissue paper wrappers being fed in multiple strip form within a cover or case, which may be also fed in strip form; and in their passage through the machine the cover strip is folded around the wrapper strips and thereafter they are together cut into proper length for the books.

Another object of the invention is to provide a machine of the character described which can be readily attached to or used in combination with a tobacco bagging or packaging machine to deliver the cigarette books in convenient position for application to the bags or packages of tobacco as the latter are delivered from the bagging or packaging machine.

The invention consists in the novel construction of the machine for making such books as hereinafter described; and I will explain the invention in connection with the accompanying drawings in which such a machine is illustrated to enable others to readily understand and use the same; and set forth in the claims the novel constructions and combination of parts for which protection is desired.

In said drawings:

Figure 1 is a side elevation of the complete machine.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is an enlarged detail longitudinal sectional view.

Figs. 4, 5, and 6 are enlarged detail transverse sectional views on lines 4—4, 5—5 and 6—6, Fig. 7, respectively.

Fig. 7 is an enlarged view illustrating the folding of the cover and wrapper.

The frame supporting the operative parts may be of any suitable construction. Mounted on this frame adjacent one end thereof is a pair of cover-creasing rollers 2 and 2^a, between which the cover strip C usually of heavy paper, is fed, and by which such cover is longitudinally creased as indicated at *c* in Figs. 4 and 7 preparatory to entering the fold-former 3 as hereinafter explained. The lower roller 2^a preferably has a circumferential groove 2^c, corresponding in width to the desired width of the book, and the upper roller has a peripheral projecting portion 2^d adapted to enter the groove of the roller 2^a to form the creases *c* in the cover strip.

The rollers 2, 2^a may be mounted in suitable bearings 2^v at opposite sides of the frame; and the upper roller 2 may be pressed toward the lower roller 2^a by means of spring 2^e, which can be adjusted by screws 2^f in the well known manner so as to hold the rollers yieldingly in contact.

The cover strip C is directed to the rollers 2, 2^a by a guide plate 1 attached to the frame in advance of the rollers 2, 2^a, and this cover-strip may be supplied to this guide from a pile or from a roll according to whether the cover strips are supplied in long or short lengths. When supplied from long lengths the cover strips may be fed from a roll C' mounted on supports 1^b attached to the frame, and led down under a guide roller 1^v and thence over the guide plate 1 to the rollers as indicated in the drawings; and after passing between the rollers 2, 2^a and being creased thereby as described, the cover is directed forward to and through the fold-former 3.

This fold-former 3 is preferably made of sheet metal and has a flared receiving end adjacent rollers 2, 2^a, slightly wider than the cover, and up-turned sides 3^a, which sides converge as they recede from the creasing rollers, and these sides are gradually turned inward until they finally overlap, without touching, as shown at 3^b; the bottom of the guide remains flat but gradually narrows until it conforms to the width of the book to be produced.

The sides of the fold-former are so arranged, see Figs. 2 and 6, that at the point

indicated at section line 5-5, (see Figs. 5 and 7) the cover strip will be longitudinally folded on the creases, *c, c* so that one side of the cover strip practically lies within or under the other side of the cover strip; and both sides lie over the multiple wrapper strip *W*, which is fed into the fold-former and over the central part of the cover strip after it emerges from the rollers 2, 2^a, but before the sides of the cover strip are folded over.

The wrappers are preferably supplied in the form of a multiple-layer-strip *W*, which may be of any desired length and preferably contains ten or more thicknesses or layers of suitable cigarette wrapping paper. These wrapper strips are of the proper width and may be fed from a pile or roll. As shown the wrapper strip *W* is fed from a roll *W'* mounted on supports 1^w on the frame in advance of the creasing rollers; and the wrapper strip *W* is led from said roll above the creasing rollers 2, 2^a and over and under guide rollers 2', 2' and thence into the fold-former 3 above the central part of the cover strip *C* but between the partly folded sides thereof; and the wrapper strip is carried forward with the cover strip and inclosed within the cover strip, as indicated in Figs. 5 and 6, as they together pass through the fold-former.

The overlapped side portions of the fold-former are provided with notches 3^a and 3^b adjacent the delivery end thereof to facilitate the initial threading of the cover and wrapper strips through it, and to insure that the said strips shall be properly folded as described before emerging from the guide.

The folded cover strip with inclosed wrapper strip after passing through the fold-former are passed between presser rollers 4, and 4^a, journaled in suitable bearings 4^b on the frame to compress the strips and set the folds. The upper roller 4 may be yieldingly pressed toward roller 4^a by means of springs 4^b, adjustable by screws 4^c in the usual manner; and these presser rollers are preferably provided with intermeshing gears 4^d and 4^e and may be driven by any suitable means. As shown the roller 4^a has its shaft extended at one side of the frame and provided with fast and loose pulleys 5 and 5^a, which may be driven by a belt, not shown, from any suitable driver; and a belt shifter 4^x may be provided by which the machine can be stopped or started at will.

After the folded cover and inclosed wrappers have been once engaged with the presser rollers 4, 4^a they will be drawn thereby continuously between the creasing rolls and fold-former; the creasing folding and wrapping operations being automatically performed as the strips are drawn through the machine by the action of the presser rollers 4, 4^a.

In some cases it might be desirable to

drive the creasing rollers 2, 2^a; and as shown the roller 2^a may be driven from the roller 4^a, by means of a counter shaft 6 having a bevel gear 6^a on one end engaging a beveled gear 4^f on the shaft of roller 4^a, and having a beveled gear 6^b on its opposite end engaging a beveled gear 2^a on roller 2^a. The positive driving of the creasing rollers 2, 2^a would not be essential if the cover-strip and wrapper-strip are supplied in long lengths on rolls; but it would be important to drive the creasing rollers if the cover and wrapper strips were in short lengths.

The folded cover strip and the inclosed wrapper strip emerging from rollers 4 and 4^a, may be severed into the desired book lengths by cutting devices which may be of any suitable kinds. I preferably employ, in the machine shown, upper and lower male and female cutting cylinders 7, and 7^a journaled in suitable bearings in guides 7^b attached to the frame; and the upper cutting cylinder may be pressed toward the cylinder 7^a by means of springs 7^c, adjustable by bolts 7^d in the usual manner; and said cutting cylinders are provided with intermeshing gears 7^e and 7^f, and may be driven directly from the roller 4^a by means of an intermediate pinion 7^g meshing with both gears.

The complete books may be delivered from the cutters into any suitable receiver. When the book making machine is applied to or connected with a packaging or bagging machine, the books will be delivered in convenient position to be applied by the operator (or by any suitable mechanism, not forming part of this invention) to the bags or packages delivered from the bagging or packaging machine.

I claim—

1. In a machine for making cigarette books, the combination of means for supplying a cover strip, means for supplying a wrapper strip; an annularly recessed roll and a coacting roll having a peripheral portion entering the recess of the opposed roll and coacting therewith to longitudinally crease the cover strip at opposite sides of the wrapper strip and partially fold the sides of the cover; and fold forming means for turning the opposite sides of the cover strip over each other and upon the wrapper strip.

2. In a machine for making cigarette books, the combination of means for supplying a cover strip, means for supplying a wrapper strip; an annularly recessed roll and a coacting roll having a peripheral portion entering the recess of the opposed roll and coacting therewith to longitudinally crease the cover strip at opposite sides of the wrapper strip and partially fold the sides of the cover; and fold forming means for turning the opposite sides of the cover strip over each other and upon the wrapper strip;

with presser rolls at the end of the fold forming means between which rolls the folded cover strips and inclosed wrapper strips are passed between the creasing rolls and through the fold-forming means, substantially as described.

3. In a machine for making cigarette books, a fold-former formed of a sheet metal plate bent to form a wide receiving end with upturned sides, said sides converging until separated the desired width of the book cover, and then turning inward and gradually overlapping, the overlapped portions having opposite notches in their overlapping inner edges near the outlet end to facilitate threading sheets of material through the former, substantially as described.

4. In a machine for making cigarette books, the combination of means for supplying a cover strip, means for supplying a wrapper strip; a pair of rolls adapted to longitudinally crease and partly fold the cover strip at opposite sides of the wrapper strip, and rolls for pressing the folded cover strip and inclosed wrapper strip and drawing same from the supplies through the creasing rolls and fold former; with a fold-former interposed between the creasing and

pressing rolls for turning the opposite sides of the cover strip over each other and upon the wrapper strip; and means for cutting the folded cover strip and inclosed wrapper strip into book lengths.

5. In a machine for making cigarette books, the combination of means for supplying a cover strip, means for supplying a wrapper strip, a pair of rolls adapted to longitudinally crease and partly fold the cover strip at opposite sides of the wrapper strip, and rolls for pressing the folded cover strip and the inclosed wrapper strip and drawing same from the supplies through the creasing rolls and fold former; with a fold-former interposed between the creasing and pressing rolls and having a flaring end adjacent the creasing rolls and sides converging toward the presser rolls and turned in and overlapping; rotary cylinders for cutting the folded cover strip and inclosed wrapper strip into book lengths; and means for rotating the pressing rolls and cutting cylinders.

In testimony that I claim the foregoing as my own, I affix my signature.

GEORGE W. UTSMAN.